

LIST OF CLAIMS

1. (Cancelled)

2. (Previously Presented) A composition comprising

(A) a copolymer which comprises

(I) repeating units which are derived from a monomer having a fluoroalkyl group, a carbon-carbon double bond, and optionally a urethane or urea bond,

(II) repeating units which are derived from a monomer having a urethane or urea bond and one carbon-carbon double bond, but no fluorine atom,

(III) repeating units which are derived from a monomer having a carbon-carbon double bond, the homopolymer of said monomer having a glass transition temperature (T_g) of 50°C or less,

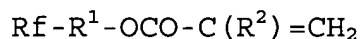
(IV) repeating units which are derived from a monomer having a hydrophilic group and a carbon-carbon double bond, and

(V) repeating units which are derived from a monomer having a chlorine atom and a carbon-carbon double bond
and

(B) a film-forming auxiliary consisting of an organic solvent, which dissolves or swells the copolymer,

wherein said film-forming auxiliary (B) has a solubility parameter (sp) at 25°C in the range between 8 and 11, said film-forming auxiliary (B) is at least one solvent selected from the group consisting of alcohols, glycol ethers, linear or cyclic silicones, esters, diesters, ketones and ethers, and the composition is in the form of an aqueous dispersion of the copolymer dispersed in a medium comprising water in the presence of a nonionic, cationic or anionic emulsifier.

3. (Original) A composition according to claim 2, wherein a monomer having no urethane bond, which constitutes said repeating units (I), is a compound of the formula:



wherein R_f is a linear or branched fluoroalkyl group having 3 to 20 carbon atoms;

R^1 is a linear or branched alkylene group having 1 to 20 carbon atoms, a group of the formula: $-SO_2N(R^3)R^4-$ or a group of the formula: $-CH_2CH(OR^5)CH_2-$ in which R^3 is an alkyl group having 1 to 10 carbon atoms, R^4 is a linear or branched alkylene group having 1

to 10 carbon atoms, and R^5 is a hydrogen atom or an acyl group having 1 to 10 carbon atoms; and

R^2 is a hydrogen atom or a methyl group.

4. (Original) A composition according to claim 2, wherein a monomer having a urethane or urea bond and a fluoroalkyl group, which constitutes said repeating units (I), is a monomer obtained by reacting

(I-a) a compound having at least two isocyanate groups,

(I-b) a compound having one carbon-carbon double bond and at least one hydroxyl or amino group, and

(I-c) a compound having a fluoroalkyl group and one hydroxyl or amino group.

5. (Original) A composition according to claim 2, wherein a monomer which constitutes said repeating units (II) is a monomer obtained by reacting

(II-a) a compound having at least two isocyanate groups, and

(II-b) a compound having one carbon-carbon double bond and at least one hydroxyl or amino group with

(II-c-1) a compound having at least one hydroxyl or amino group, and a polyoxyalkylene chain or a polysiloxane chain, or

(II-c-2) a compound having at least one hydroxyl or amino group.

6. (Previously Presented) A composition according to claim 2, wherein said repeating units (III) are derived from a monomer having conjugated double bonds or one or two carbon-carbon double bonds, and the homopolymer of which has a glass transition temperature (T_g) of 50°C or less.

7. (Original) A composition according to claim 2, wherein said repeating units (III) are derived from a monomer, the homopolymer of which has a glass transition temperature (T_g) of 30°C or less.

8. (Original) A composition according to claim 2, wherein said repeating units (III) are derived from a monomer, the homopolymer of which has a glass transition temperature (T_g) of 0°C or less.

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Previously Presented) A composition according to claim 2, wherein said film-forming auxiliary is at least one solvent selected from the group consisting of glycol ethers, esters and diesters.

13. (Cancelled)

14. (Previously Presented) A composition according to claim 2, which is in the form of an aqueous dispersion of the copolymer dispersed in a medium comprising water in the presence of a cationic emulsifier.

15. (Previously Presented) A water and oil repellent comprising a composition as claimed in claim 2.

16. (Original) A method for imparting water and oil repellency to a substrate comprising applying a water and oil repellent as claimed in claim 15 to the substrate by spraying, coating or dipping.

17. (Previously Presented) A water and oil repellent which is in the form of an emulsion comprising a composition as claimed in claim 2.

18. (Original) A water and oil repellent product comprising a water and oil repellent as claimed in claim 17 and an application apparatus.

19. (Previously Presented) A water and oil repellent product comprising a water and oil repellent as claimed in claim 17 which is charged in a container equipped with a mechanism for spraying a liquid outside of said container.

20. (Previously Presented) A water and oil repellent product comprising a water and oil repellent as claimed in claim 17 which is charged in a container equipped with a mechanism for propelling a liquid outside of said container using a pressure.

21. (Previously Presented) A water and oil repellent in the form of foam or mousse comprising a composition as claimed in claim 2.

· 22. (Previously Presented) A water and oil repellent product comprising a water and oil repellent as claimed in claim 21 which is charged in a container equipped with a mechanism for foaming and propelling a liquid outside of said container.

· 23. (Previously Presented) A method for imparting water and oil repellency to a substrate comprising applying on said substrate the water and oil repellent of claim 17 by spraying, coating or dipping.

· 24. (Previously Presented) A method for imparting water and oil repellency to a substrate according to claim 23 which further comprises dehydrating said substrate after applying the water and oil repellent.

· 25. (Previously Presented) A water and oil repellent in the form of an aerosol comprising a composition as claimed in claim 2.

· 26. (Original) A water and oil repellent product comprising water and oil repellent as claimed in claim 25.

27. (Previously Presented) A water and oil repellent product comprising a water and oil repellent as claimed in claim 25 which is charged in a container equipped with a mechanism for spraying a liquid outside of said container.

28. (Cancelled)

29. (Previously Presented) A water and oil repellent in the state of a solid comprising a composition as claimed in claim 2.

30. (Original) A water and oil repellent product comprising a water and oil repellent as claimed in claim 29.

31. (Previously Presented) A water and oil repellent in the form of a paste comprising a composition as claimed in claim 2.

32. (Original) A water and oil repellent product comprising a water and oil repellent as claimed in claim 31.

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Previously Presented) A composition comprising

(A) a copolymer, which comprises

(I) repeating units which are derived from a monomer having a fluoroalkyl group, a carbon-carbon double bond, and optionally a urethane or urea bond,

(II) repeating units which are derived from a monomer having a urethane or urea bond and one carbon-carbon double bond, but no fluorine atom,

(III) repeating units which are derived from a monomer having a carbon-carbon double bond, the homopolymer of said monomer having a glass transition temperature (T_g) of 50°C or less,

(IV) optional repeating units which are derived from a monomer having a carbon-carbon double bond and a hydrophilic group selected from a carboxyl group, a phosphate group and a sulfate group, or a monomer selected from the group consisting of 2-hydroxy-3-phenoxypropyl acrylate, 2-acryloyloxyethyl-2-hydroxyethylphthalic

acid, hydroxypropyl methacrylate trimethylammonium chloride, glucosylethyl methacrylate, 2-hydroxy-3-acryloyloxypropyl methacrylate and neopentyl glycol hydroxypivalate diacrylate, and

(V) optional repeating units which are derived from a monomer having a chlorine atom and a carbon-carbon double bond and

(B) a film-forming auxiliary consisting of an organic solvent which dissolves or swells the copolymer, wherein at least one of the repeating units (IV) and the repeating units (V) is essential, said film-forming auxiliary (B) has a solubility parameter (sp) at 25°C in the range between 8 and 11, said film-forming auxiliary (B) is at least one solvent selected from the group consisting of alcohols, glycol ethers, linear or cyclic silicones, esters, diesters, ketones and ethers, and the composition is in the form of an aqueous dispersion of the copolymer dispersed in a medium comprising water in the presence of a nonionic, cationic or anionic emulsifier.

38. (Previously Presented) A composition comprising

(A) a copolymer which comprises

(I) repeating units which are derived from a monomer having a fluoroalkyl group, a carbon-carbon double bond, and optionally a urethane or urea bond,

(II) repeating units which are derived from a monomer having a urethane or urea bond and one carbon-carbon double bond, but no fluorine atom,

(III) repeating units which are derived from a monomer having a carbon-carbon double bond, the homopolymer of said monomer having a glass transition temperature (T_g) of 50°C or less,

(IV) optional repeating units which are derived from a monomer having a hydrophilic group and a carbon-carbon double bond, and

(V) optional repeating units which are derived from a monomer having a chlorine atom and a carbon-carbon double bond
and

(B) a film-forming auxiliary consisting of an organic solvent which dissolves or swells the copolymer,
wherein at least one of the repeating units (IV) and the repeating units (V) is essential, said film-forming auxiliary (B) has a solubility parameter (δ) at 25°C in the range between 8 and 11, said film-forming auxiliary (B) is at least one solvent selected from the group consisting of glycol ethers and diesters, and the composition is in the form of an aqueous dispersion of the

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copolymer dispersed in a medium comprising water in the presence of a nonionic, cationic or anionic emulsifier.